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RTCA Special Committee 186, Working Group 5

ADS-B UAT MOPS

Meeting #12

Draft 1 of Appendix L for Review in Washington

Presented by Chris Moody

SUMMARY
This is Draft 1 of the proposed Appendix L of the UAT MOPS, presented by Chris Moody for review in Washington.

Appendix L

Supporting the Trajectory Change Reports

Within the Established UAT Message Payload

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Two of the UAT ADS-B Message Payload Type Codes ("4" and "5") contain the Trajectory Change (TC) Element capable of conveying 96 bits of message payload. In this MOPS, all 96 bits of the TS element are Reserved and set to ALL ZEROs pending their definition in a future MOPS version. Although the TC element is undefined in this MOPS, the performance assessment provided in Appendix K assumes the 96 bits supports TCR+0 for A2 equipment; and TCR+0 and TCR+1 for A3 equipment. To justify this assumption, the Table below shows how all the information required for the Trajectory Change Report could be supported within the established UAT ADS-B message payload.

Table L-1: Proposed Trajectory Change Report Elements

	TC Report Elements		How Supported by UAT Message Payload
ID	Participant Address	[24 bits]	Conveyed in HEADER Element (2.2.4.5.1.3)
	Address Qualifier	[4 bits]	Conveyed in HEADER Element (2.2.4.5.1.2)
TOA	Time of Applicability	[1 s resolution]	Not explicitly transmitted; added by receiver (2.2.8.3.5)
TC Report #	TC Report Sequence Number	[2 bits]	Can be determined from the Payload Type Code (see Table 2.2.4.3)
TC Report Version	TC Report Cycle Number	[2 bits]	2 bits conveyed in the TC Element
	(Reserved for TC Management Indicator)	[3 bit]	3 bits conveyed in the TC Element
TTG	Time To Go	[4 s resolution]	9 bits conveyed in the TC Element (34 minutes @ 4s resolution)
Horizontal TC Report Information	Horizontal Data Available and Horizontal TC Type	[4 bits]	4 bits conveyed in the TC Element
	TC Latitude	[700 m or better]	15 bits conveyed in he TC Element (angular weighted binary)
	TC Longitude	[700 m or better]	16 bits conveyed in he TC Element (angular weighted binary)
	Turn Radius	[700 m or better]	7 bits conveyed in the TC Element (~40 NM @ 700m res)
	Track to TCP	[1 degree]	9 bits conveyed in the TC Element (0.7 deg resolution)
	Track from TCP	[1 degree]	9 bits conveyed in the TC Element (0.7 deg resolution)
	(Reserved for Horizontal Conformance)	[1 bit]	1 bit conveyed in the TC Element
	Horizontal Command/Planned Flag	[1 bit]	1 bit conveyed in the TC Element
Vertical TC Report Information	Vertical Data Available and Vertical TC Type	[4 bits]	4 bits conveyed in the TC Element
	TC Altitude	[100 ft resolution]	10 bits conveyed in the TC Element
	TC Altitude Type	[1bit]	1 bit conveyed in the TC Element
	(Reserved for Altitude Constraint Type)	[2 bits]	2 bits conveyed in the TC Element
	(Res. for Able/Unable Altitude Constraint)	[1 bit]	1 bit conveyed in the TC Element
	(Reserved For Vertical Conformance)	[1 bit]	1 bit conveyed in the TC Element
	Vertical Command/Planned Flag	[1 bit]	1 bit conveyed in the TC Element
Spare bits in TC Element of UAT Message Payload→			0 bits
Total bits utilized in TC Element of UAT Message Payload →			**96 bits**

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